General Mobile Plant Operation and Safety

Business Name:	ABN:	
Business Address:		
Contact Person:	Phone:	Email:

THIS RISK ASSESSMENT IS APPROVED BY THE PCBU OF THE PROJECT

Under the Work Health and Safety Regulation (WHS Regulation), a person conducting a business or undertaking (PCBU) is required to ensure that a RISK ASSESSMENT is prepared before the proposed work starts.

Full Name:		
Signature:	Title:	Date:

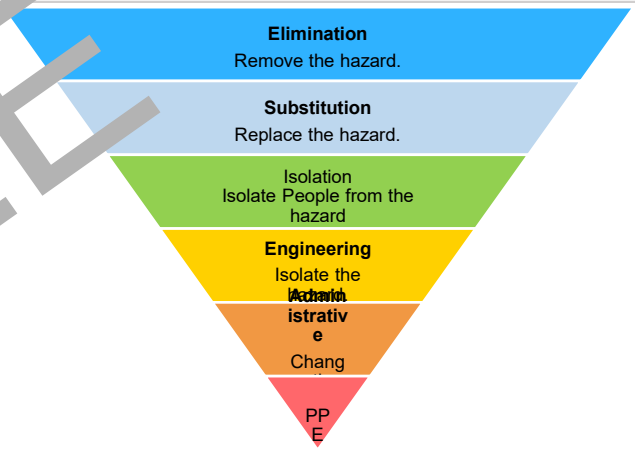
CLIENT OR PRINCIPAL CONTRACTOR DETAILS

Client:	SCOPE OF WORKS
Project Name:	
Project Address:	
Project Manager:	
Contact Phone:	
Date Risk Assessment supplied to Project Manager:	

RISK MATRIX

LIKELIHOOD	INSIGNIFICANT	MINOR	MODERATE	MAJOR	CATASTROPHIC	SCORE	ACTION
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE		
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Rev before work
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACU	2M MO RATE	Ensure control measures in place.
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 H	1L LOW	Monitor and keep records.

HIERARCHY OF CONTROLS



Risk Rating & Required Action:

4A	Stop work. The risk is intolerable. E inate the hazar redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or hi er-level authorisati is required.
3H	Review and approve additional c rols b ask arts. Senior supervisor sign-off needed.
2M	Ensure all nominated controls are in ace and effe ive. Proceed with caution; monitor conditions.
1L	Proceed, following standard operating procedures Monitor and keep records.

Consequence Scale:

Consequence	People (injury/illness)	Project / Assets	Compliance / Reputation
Catastrophic	Fatality or permanent total disability	project shutdown	Significant regulator intervention; criminal prosecution
Major	Serious injury/illness (hospital > 5 days)	critical delay	Improvement notice; major media coverage
Moderate	Medical-treatment injury; lost-time > 1 day	moderate delay	Minor breach; adverse client comment
Minor	First-aid only, no lost time	negligible delay	Isolated non-conformance
Insignificant	No injury	no schedule impact	Deviation caught and corrected on site

Notes on Hierarchy of Controls:
Remember to apply controls in the preferred order shown by the coloured pyramid:

1. **Eliminate**
2. Substitute
3. Isolate
4. Engineering
5. Administrative
6. PPE

Always document **why** a lower-order control is accepted if elimination or substitution is not reasonably practicable.

aligned with Safe Work Australia's Managing the risk of fatigue at work *(2023) and ISO 45001:2018 clauses 6–8.*

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
1. Governance, WHS Duties and Consultation for Mobile Plant	• Lack of clear allocation of PCBU, officer and worker duties for mobile plant under WHS Act 2011 • Inadequate WHS policy framework specific to mobile plant operation and interactions with pedestrians • Insufficient consultation with workers and Health and Safety Representatives on plant-related risks and changes • Failure to integrate mobile plant risks into the overall WHS management system and risk register • Poor change management when introducing new mobile plant, technologies or work methods (e.g. wireless control, anti-collision systems) • No formal process to review incidents, near misses and unsafe conditions involving mobile plant • Inadequate budget or resourcing for plant safety initiatives, training and engineering controls	4A	• Establish and maintain a documented Mobile Plant Safety Procedure aligned with WHS Act 2011, WHS Regulations 2011 and relevant Codes of Practice • Define and document responsibilities for PCBUs, officers, supervisors, plant coordinators and operators in relation to mobile plant safety and maintenance systems • Implement a formal consultation process with workers and HSRs when acquiring plant, altering layouts, changing work methods or introducing automated/remote systems • Include mobile plant hazards in the corporate WHS risk register with regular review dates, actions, and responsible persons • Implement a change management process (MOC) for new or modified mobile plant, including risk assessment, training, procedures and trial periods • Require officers to receive periodic briefings and reports on mobile plant risk performance indicators (incidents, near misses, maintenance defects, training completion) Schedule annual reviews of the Mobile Plant Safety Procedure and cross-check against legislative or standard updates Ensure WHS Committee agendas routinely include mobile plant safety issues, incident trends and corrective action status	2M
2. Plant Procurement, Design and Engineering Controls	• Procurement of mobile plant that does not meet Australian Standards or is unsuitable for the site conditions (e.g. unstable ground, confined areas) • Insufficient guarding of moving parts, pinch and crush points on mechanised equipment, leading to entanglement and limb injuries • Inadequate integration of safety devices such as emergency stop buttons, safety trip systems, interlocks and tilt sensors • Failure to specify anti-collision systems, reversing cameras, alarms and proximity warning systems where required • Purchase of plant without sufficient vibration control, ergonomic design or suitable controls for hand-eye operation	4A	• Implement a formal plant procurement standard requiring compliance with relevant Australian Standards, WHS Regulations and manufacturer specifications • Require pre-purchase risk assessments that consider site conditions, operating environment, interaction with pedestrians and other plant, and whole-of-life maintenance needs • Specify that all mobile plant must incorporate appropriate guarding for moving parts, with interlocks to prevent operation when guards are removed or open where practicable • Mandate inclusion of engineering controls such as emergency stops, safety trip devices, seatbelt interlocks, tilt and rollover sensors, speed limiters and load monitoring systems as relevant • Require anti-collision and proximity detection technology, reversing cameras and alarms, and 360-degree visibility aids for high-risk plant and congested sites • Ensure procurement contracts require full safety documentation, including operating manuals, maintenance schedules, and details of all safety functions and settings • Include ergonomic criteria in specifications for controls layout, visibility, vibration control and seating to mitigate long-term musculoskeletal and vibration risks • Conduct commissioning inspections and acceptance testing before plant is put into service to verify that all safety and guarding features operate as intended	2M

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	• Selection of plant that cannot safely operate on inclines, unstable ground or in low-visibility environments • Lack of compatibility between mobile plant and remote-control / wireless-control equipment • Inadequate documentation from suppliers regarding safe operating limits, maintenance requirements and safety system use			
3. Plant Guarding, Safety Devices and Interlock Management	• Machine guarding failures due to poor design, damage, removal or bypassing of guards and covers • Workers deleting, disabling or bridging safety devices, light curtains, trip systems or interlocks to speed up work or clear jams • Exposure of body parts to moving parts during operations, adjustments or cleaning activities • Inadequate guarding of nip points, crushing zones, and entanglement points for loose clothing [illegible] jewellery • Lack of standardised process for inspecting, maintaining and testing emergency stop buttons, trip systems and interlocks • Unclear rules about operating unmanned, automated or [illegible] machinery and the associated safeguarding • Insufficient labelling and signage indicating guarded danger zones and isolation points	4A	• Develop and enforce a Plant Guarding and Safety Devices Standard that specifies minimum guarding requirements and prohibits operation with guards removed or compromised • Implement a formal permit or authorisation process for any temporary removal of guarding, requiring risk assessment, isolation and supervision • Introduce disciplinary procedures for unauthorised disabling, deleting or bypassing of safety devices and interlocks, supported by clear policy and communication • Establish routine inspection schedules to verify the integrity and function of guards, interlocks, trip systems and emergency stops, with documented checklists • Include guard integrity and safety device checks in pre-start inspection systems for relevant plant • Ensure guards are designed for easy removal and replacement using tools, minimising the inclination to bypass them for convenience • Clearly label pinch, crushing and entanglement zones and provide physical barriers or distance guarding where full enclosure is not practicable • Provide targeted training for operators and maintainers on the purpose, correct use and limitations of guards, interlocks, trip systems and emergency stops	2M
4. Pre-Start Inspections, Condition Monitoring and Maintenance Systems	• Inadequate system for performing and recording pre-start checks on mobile plant and attachments • Failure to identify critical defects such as faulty brakes, steering, tyres, safety guards or warning systems before operation	4A	[redacted]	2M

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	• Deferred or reactive maintenance culture leading to plant failures in service • Lack of routine functional testing of safety features such as emergency stops, tilt sensors and anti-collision systems • Poor communication of reported defects between operators, maintenance and supervisors • Operating plant that is overdue for servicing or inspection due to inadequate scheduling systems • No mechanism to track and trend recurrent failures or systemic issues in the mobile plant fleet		[redacted]	
5. Operator Competency, Licensing and Training Systems	• Operators using mobile plant without appropriate high risk work licences, VOC (Verification of Competency) or formal training • Lack of structured training on specific plant models, control layouts, safety systems and emergency procedures • Insufficient training on hand-eye coordination requirements for precision control of levers, joysticks and machine controls • Inadequate understanding of hazards associated with operating on unstable ground, inclines and confined or congested spaces • No formal re-assessment of competency when plant, technology or work methods change (e.g. remote control, wireless-controlled plant, anti-collision tools) • Poor supervision of new, young or inexperienced operators • Inadequate record keeping of licences, competency assessments and training refreshers	4A	[redacted]	2M

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6. Safe Systems for Pre-Start, Daily Safety Checks and Machine Set-Up	• No standardised process for conducting and verifying daily safety checks before plant operation • Inconsistent completion of safety checklists due to time pressure or poor supervision • Failure to ensure all safety guards are in place and functional before plant is started • Incorrect adjustment of machine settings, safety functions or operational modes, leading to unexpected behaviour • Lack of controls for unattended machinery start-up or automated sequences • Inadequate systems to ensure plant is parked and secured safely on inclines or unstable surfaces when not in use	3H	[redacted]	2M
7. Traffic Management, Site Layout and Pedestrian Interaction	• Mobile plant operating in close proximity to pedestrians, other vehicles and structures without [redacted] separation • Behind-machine [redacted] operators have limi[redacted] risk striking persons or objects • Movement of plant in limited spa[redacted] congested areas or irreg[redacted] conditions without defined controls • Inadequate signage, delineation and communication of exclusion zones around heavy machinery • No clear rules for reversing, spotting, signalling and radio communications on shared worksites • Poor maintenance of access roads, ramps and work platforms, contributing to instability, rollovers and collisions	4A	[redacted]	2M

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8. Operating Environment, Ground Conditions and Rollover Prevention	• Plant operations on unstable or uneven ground increasing risk of rollovers and tip-overs • Parking equipment on inclines without adequate controls to prevent unintentional movement • Inadequate assessment of ground bearing capacity for heavy plant and load conditions • Operating in areas with concealed voids, trenches, services or edge drop-offs • Limited management of work on highly mechanised equipment in variable conditions (e.g. wet, soft or vibrating ground) • Insufficient controls for managing vibrations transmitted to operators and surrounding structures	4A	[redacted]	2M
9. Isolation, Lock-Out/Tag-Out and Clearing Jammed Machinery	• Failure to adequately isolate mobile [redacted] fixed plant before clearing jams or performing inspections and minor adjustments • Workers exposing [redacted] body parts to moving componen[redacted] while th[redacted] energised or has st[redacted]ergy • Inadequate procedures for workin[redacted]n highly mechanised or automated [redacted] equipment with multiple e[redacted]gy sources • Absence of clear lock-out/tag-out systems for mobile plant during maintenance and inspection activities • Reliance on informal or verbal controls when clearing blockages or attending to minor faults	4A	[redacted]	2M
10. Fatigue, Fit-for-Work and Human Factors in Plant Operation	• Fatigue mismanagement leading to reduced vigilance, slower reaction times and increased collision risk	3H	[redacted]	1L

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	• Operators working extended shifts or night shifts without adequate breaks or roster controls • Inadequate screening for medical conditions or substances that may impair the safe operation of mobile plant • Cognitive overload due to complex control systems, multiple alarms and competing demands on attention • Poor ergonomic design for seating, controls and visibility leading to musculoskeletal strain and reduced situational awareness		[redacted]	
11. Technology, Remote and Wireless-Controlled Operations	• Inadequate system for managing risks associated with remote control, wireless-controlled and unattended machinery • Loss of line-of-sight or situational awareness by remote operators leading to collisions or entrapment of others • Interference, signal loss or latency in wireless control systems affecting response of plant • Over-reliance on a[redacted]collision and safety systems wit[redacted]ut understanding their limitations an[redacted]ailure m[redacted] • Insufficient training o[redacted]he safe use[redacted]d emergency override of remote and automated systems	3H	[redacted]	2M
12. Emergency Preparedness, Incident Response and Shutdown Coordination	• Lack of clear procedures for emergency stopping of mobile plant and safe evacuation from the work area • Inadequate coordination of safety shutdowns involving multiple items of plant and services • Insufficient training on operating emergency stop buttons and safety trip systems under stress • Delayed response to plant-related incidents due to unclear communication channels or responsibilities	3H	[redacted]	1L

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	• Poor post-incident investigation and learning processes, leading to repeat events		[redacted]	
13. Documentation, Communication and Continuous Improvement	• Outdated or inconsistent procedures, work instructions and safety rules for mobile plant operations • Poor communication of changes in plant, technology, site layout or traffic routes to operators and affected workers • Lack of structured audits, inspections and reviews of mobile plant safety systems • Insufficient use of data from inspections, incidents and near misses to improve controls • Non-compliance with record-keeping requirements for maintenance, training, risk assessments and licences	3H	[redacted]	2M

EMERGENCY RESPONSE – CALL 000 FOR EMERGENCIES

Ensure to have an Emergency Management Plan in place as well as adequate numbers of trained first aid staff with easy access to fully stocked first aid kits, rescue equipment, material safety data sheets, adequate access to emergency communication equipment and fire-fighting equipment suitable for all classes of fire and ignition sources.

LEGISLATIVE REFERENCES

RELEVANT LEGISLATION AND CODES OF PRACTICE. DELETE THE LEGISLATIVE REFERENCES FOR ANY STATE THAT ARE NOT APPLICABLE

Queensland & Australian Capital Territory
Work Health and Safety Act 2011
Work Health and Safety Regulations 2011
Legislation QLD: https://www.worksafe.qld.gov.au/laws-and-compliance/work-health-and-safety-laws
Codes of Practice QLD: https://www.worksafe.qld.gov.au/laws-and-compliance/codes-of-practice
Legislation ACT: https://www.worksafe.act.gov.au/laws-and-compliance/acts-and-regulations
Codes of Practice ACT: https://www.worksafe.act.gov.au/laws-and-compliance/codes-of-practice

New South Wales
Work Health and Safety Act 2011
Work Health and Safety Regulations 2025
Legislation NSW: https://www.safework.nsw.gov.au/legal-obligations/legislation
Codes of Practice NSW: https://www.safework.nsw.gov.au/resource-library/list-of-codes-of-practice

Northern Territory
Work Health and Safety (National Uniform Legislation) Act 2011
Work Health and Safety (National Uniform Legislation) Regulations 2011
Legislation NT: https://worksafe.nt.gov.au/laws-and-compliance/workplace-safety-laws
Codes of Practice NT: https://worksafe.nt.gov.au/forms-and-resources/codes-of-practice

South Australia
Work Health and Safety Act 2012 (SA)
Work Health and Safety Regulations 2012 (SA)
Legislation for SA: https://www.safework.sa.gov.au/resources/legislation
Codes of Practice for SA: https://www.safework.sa.gov.au/workplaces/codes-of-practice#COPs

Tasmania
Work Health and Safety Act 2012
Work Health and Safety (Transitional and Consequential Provisions) Act 2012
Work Health and Safety Regulations 2012
Work Health and Safety (Transitional) Regulations 2012
Legislation for TAS: https://worksafe.tas.gov.au/topics/laws-and-compliance/acts-and-regulations
Codes of Practice for TAS: https://worksafe.tas.gov.au/topics/laws-and-compliance/codes-of-practice

Details of permits, licenses or access required by regulatory bodies (add or delete as required):

- Permits from local council
- Authorisation to commence work
- Any required documents.

Victoria
Occupational Health and Safety Act 2004
Occupational Health and Safety Regulations 2017
Legislation VIC: https://www.worksafe.vic.gov.au/occupational-health-and-safety-act-and-regulations
Codes of Practice VIC: https://www.worksafe.vic.gov.au/compliance-codes-and-codes-practice

Western Australia
Work Health and Safety Act 2020
Work Health and Safety Regulations 2022
Legislation Western Australia: https://www.commerce.wa.gov.au/worksafe/legislation
Codes of Practice WA: https://www.commerce.wa.gov.au/worksafe/codes-practice

Safe Work Australia Links
Law and Regulation (All States): https://www.safeworkaustralia.gov.au/law-and-regulation
Model Codes of Practice: https://www.safeworkaustralia.gov.au/resources-publications/model-codes-of-practice

Model Codes of Practice

- Managing noise and preventing hearing loss at work
- Confined spaces
- Labelling of workplace hazardous chemicals
- Managing risks of hazardous chemicals in the workplace
- Welding processes
- First aid in the workplace
- Managing the risk of falls at workplaces
- Hazardous manual tasks
- Managing the risk of falls in housing construction
- Managing electrical risks in the workplace
- Demolition work
- Excavation work
- Work health and safety consultation, cooperation and coordination
- Managing the work environment and facilities
- How to manage work health and safety risks
- Managing risks of plant in the workplace
- Construction work